

IN THE CLAIMS:

Please amend claims 3, 5, 21, 22, 31 and 37 and add claims 52-56 as follows:

1-2. (Cancelled)

3. (Currently Amended) A lid assembly for a semiconductor processing system, the lid assembly comprising:

a lid having first and second opposed surfaces;

a plurality of controllable flow channels extending from the first and second opposed surfaces; and

a gas control system disposed on the first surface and operably opening and closing the channels, wherein the gas control system comprises:

a gas manifold disposed on the lid;

at least one valve coupled to the gas manifold and adapted to control a flow through one of the flow channels; and

a reservoir positioned on the lid and fluidly connected to the gas manifold.

4. (Previously Presented) The lid assembly of claim 3, wherein the gas manifold comprises:

an upper surface and a lower surface;

a first channel, a second channel and a third channel each extending through the gas manifold and exiting the lower surface; and

a fourth channel extending from the upper surface and coupling to the third channel.

5. (Currently Amended) The lid assembly of claim 4, wherein the gas control system further comprises:

a cleaning remote plasma source fluidly coupled to the fourth channel.

6. (Original) The lid assembly of claim 4, wherein the gas manifold further comprises:

a conduit disposed therein adapted to flow a heat transfer fluid therethrough.

7-19. (Cancelled)

20. (Previously Presented) The lid assembly of claim 22, wherein the gas manifold further comprises a fourth channel coupled between the upper surface and the third channel.

21. (Currently Amended) The lid assembly of claim 20 further comprising:
a cleaning remote plasma source fluidly coupled to the fourth channel.

22. (Currently Amended) A lid assembly for a semiconductor processing system, the lid assembly comprising:

a lid having first and second opposed surfaces, the first and second opposed surfaces having a first inlet channel, a second inlet channel and a third inlet channel disposed therethrough;

a gas manifold coupled to the first surface of the lid, the gas manifold comprising:

a body having an upper surface and lower surface;

a first channel, a second channel, and a third channel each extending through the gas manifold to the lower surface;

a valve coupled to the gas manifold; and

a gas reservoir positioned on the lid and fluidly connected to the gas manifold.

23. (Original) The lid assembly of claim 22 further comprising:

a thermal conditioning channel disposed in the gas manifold fluidly coupling the valve and the gas reservoir.

24-28. (Cancelled)

29. (Previously Presented) The lid assembly of claim 31, wherein the gas manifold further comprises a cleaning agent supply channel coupled between the upper surface and one of the plurality of channels.

30. (Original) The lid assembly of claim 29 further comprising:
a cleaning source fluidly coupled to the cleaning agent supply channel.

31. (Currently Amended) A lid assembly for a semiconductor processing system, the lid assembly comprising:

a lid having first and second opposed surfaces, the first and second opposed surfaces having a plurality of inlet channels disposed therethrough;

a valve;

a gas manifold coupled to the first surface of the lid, the gas manifold comprising:

a body having an upper surface and lower surface;

a plurality of gas channels extending through the gas manifold to the lower surface; and

a thermal conditioning channel disposed in the gas manifold and fluidly coupled to at least one of the plurality of gas channels by the valve; and

a gas reservoir fluidly positioned on the lid, connected to the gas manifold, and fluidly coupled to the valve by the thermal conditioning channel.

32. (Previously Presented) The lid assembly of claim 31 further comprising:

a baffle plate having a first side and a second side, the first side coupled to the second surface of the lid and having a recess formed therein, the recess defining a plenum with the second surface of the lid and fluidly communicating with the plurality of channels via the inlet channels disposed in the lid, the baffle plate having a center passage disposed therethrough providing a singular passageway between the plenum and the second side of the baffle plate.

33. (Original) The lid assembly of claim 32, wherein the second surface of the lid further comprises a plurality of recesses formed therein that reduce the contact area with the first side of the baffle plate.

34-36. (Cancelled)

37. (Currently amended) The lid assembly of claim 32, wherein the ~~wherein the~~ first side of the baffle plate further comprises a plurality of bosses that maintain the first side of the baffle plate in a spaced-apart relation with the second surface of the lid.

38. (Original) The lid assembly of claim 37, wherein at least one of the bosses has a mounting hole disposed therethrough.

39. (Original) The lid assembly of claim 32, wherein the first side of the baffle plate further comprises a ring circumscribing the recess that maintains the first side of the baffle plate in a spaced-apart relation with the second surface of the lid.

40. (Original) The lid assembly of claim 32, wherein the first side of the baffle plate further comprises a ring circumscribing the recess and a plurality of bosses disposed radially outward of the ring, the ring and bosses maintaining the first side of the baffle plate in a spaced-apart relation with the second surface of the lid.

41. (Original) The lid assembly of claim 40, wherein the ring and bosses extend from the first side of the baffle plate to a common elevation.

42-51. (Cancelled)

52. (New) A lid assembly for a semiconductor processing system, comprising:
a lid having a first surface opposed to a second surface;

at least one controllable flow channel extending from the first surface through the second surface; and

a gas control system disposed on the first surface and operably opening and closing the at least one controllable flow channel, wherein the gas control system comprises:

a gas manifold disposed on the lid;

at least one valve coupled to the gas manifold adapted to control a flow through the at least one controllable flow channel; and

at least one precursor reservoir fluidly connected between at least one precursor source and the gas manifold.

53. (New) The lid assembly of claim 52, wherein a remote plasma source is fluidly coupled to the at least one controllable flow channel.

54. (New) A lid assembly for a semiconductor processing system, comprising:

a lid having a first surface opposed to a second surface; and

a gas control system disposed on the first surface and operably opening and closing at least one controllable flow channel, wherein the gas control system comprises:

a gas manifold disposed on the lid;

at least one valve coupled to the gas manifold and adapted to control a flow through the at least one controllable flow channel;

at least one precursor reservoir fluidly connected to the gas manifold; and

at least one precursor source fluidly connected to the at least one precursor reservoir.

55. (New) The lid assembly of claim 54, wherein the at least one controllable flow channel extends from the first surface through the second surface.

56. (New) The lid assembly of claim 54, wherein a remote plasma source is fluidly coupled to the at least one controllable flow channel.